

CLAIMS

1. A bearing apparatus comprising:

a porous bush impregnated with lubricant;

5 a shaft supported by the bush;

a quench hardened section formed in a projecting manner
on an outer surface of the shaft which faces an inner surface
of the bush; and

an indentation which is formed between portions of the
10 quench hardened section and traps lubricant flowing out of the
bush.

2. The bearing apparatus according to claim 1, wherein the
quench hardened section is helically provided on the outer surface
15 of the shaft.

3. The bearing apparatus according to claim 1, wherein the
quench hardened section is provided on the outer surface of the
shaft in the form of a line parallel to an axial direction of
20 the shaft.

4. The bearing apparatus according to claim 1, wherein the
quench hardened section is provided on the outer surface of the
shaft in the form of a plurality of circles.

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5. The bearing apparatus according to claim 1, wherein the quench hardened section is provided on the outer surface of the shaft in the form of a lattice.

5 6. The bearing apparatus according to claim 2, wherein the quench hardened section is provided on the outer surface of the shaft such that one side of the quench hardened section with respect to a substantial center of the shaft in an axial direction thereof and the other side of the quench hardened section are
10 the form of inverted helixes.

7. The bearing apparatus according to any one of claims 1 to 6, further comprising:

sealing members provided on both sides of the bush in an
15 axial direction thereof,

wherein the quench hardened section is provided at positions on the outer surface of the shaft facing the sealing members.

20 8. A construction equipment which is provided with the bearing apparatus according to any one of claims 1 to 7, the bearing apparatus being provided at a joint of arms constituting an articulated arm.

25 9. A shaft comprising:

a quench hardened section formed on an outer surface of the shaft in a projecting manner; and

an indentation formed between portions of the quench hardened section,

5 wherein the indentation traps lubricant flowing out of a porous bush which is impregnated with lubricant and supports the shaft.

10. The shaft according to claim 9, wherein the quench hardened
10 section is helically provided on the outer surface of the shaft.

11. The shaft according to claim 9, wherein the quench hardened
section is provided on the outer surface of the shaft in the
form of a line parallel to an axial direction of the shaft.

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12. The shaft according to claim 9, wherein the quench hardened
section is provided on the outer surface of the shaft in the
form of a plurality of circles.

20 13. The shaft according to claim 9, wherein the quench hardened
section is provided on the outer surface of the shaft in the
form of a lattice.

14. The shaft according to claim 10, wherein the quench hardened
25 section is provided on the outer surface of the shaft such that

one side of the quench hardened section with respect to a substantial center of the shaft in an axial direction thereof and the other side of the quench hardened section are the form of inverted helixes.

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